AMENDMENTS TO THE CLAIMS

1. (Original) A metadata editing apparatus comprising:

a scene division unit for dividing multimedia content containing at least one of moving pictures and audio into a plurality of scenes to generate scene section information metadata indicating a scene start position and a scene end position for each scene obtained as a result of the division;

a scene description edit unit for performing hierarchical editing of each scene of the multimedia content based on the scene section information metadata sent from the scene division unit and generating scene structure information metadata describing a hierarchical structure of the multimedia content; and

a metadata description unit for integrating the scene section information metadata and the scene structure information metadata and generating metadata describing contents and a structure of the multimedia content in accordance with a predetermined format.

2. (Original) A metadata editing apparatus according to claim 1, further comprising:

a characteristic extraction unit for extracting visual characteristic amounts of each scene of the multimedia content based on the scene section information metadata sent from the scene division unit and generating characteristic description metadata,

wherein the metadata description unit integrates the scene section information metadata, the scene structure information metadata, and the characteristic description metadata and generates the metadata describing the contents and the structure of the multimedia content in accordance with the predetermined format.

3. (Currently Amended) A metadata editing apparatus according to claim 1~~or 2~~, further comprising:

a scene change detection unit for detecting each scene change point of the multimedia content based on an inter-frame difference,

wherein the scene division unit divides the multimedia content into the plurality of scenes based on the scene change point.

4. (Original) A metadata reproduction apparatus comprising:

a metadata analysis unit for analyzing metadata describing contents and a structure of multimedia content containing at least one of moving pictures and audio;

a search unit for searching the metadata for each scene matching a predetermined search condition based on visual characteristic amounts of each scene described in the metadata analyzed by the metadata analysis unit; and

a summary creation unit for creating summary information of the multimedia content matching a predetermined summary creation condition based on predetermined information described in the metadata analyzed by the metadata analysis unit.

5. (Original) A metadata delivery apparatus comprising:

a metadata analysis unit for analyzing metadata describing contents and a structure of multimedia content containing at least one of moving pictures and audio;

a terminal capability judgment unit for judging a capability of a client terminal based on information concerning performance of the client terminal;

a metadata re-generation unit for restructuring the multimedia content in accordance with the judged capability of the client terminal based on a result of the metadata analysis by the metadata analysis unit and re-generating second metadata describing contents of the restructured multimedia content; and

a metadata delivery unit for delivering the second metadata re-generated by the metadata re-generation unit to the client terminal.

6. (Currently Amended) A metadata delivery apparatus comprising:

a hint information analysis unit for analyzing~~metadata optimization~~ hint information describing a type of each descriptor contained in metadata;

a metadata analysis/re-generation unit for analyzing metadata describing contents and a structure of multimedia content containing at least one of moving pictures and audio based on the analyzed~~metadataoptimization~~ hint information and a condition for metadata re-generation and re-generating second metadata; and

a metadata delivery unit for delivering the second metadata re-generated by the metadata analysis/re-generation unit to a client terminal.

7. (Currently Amended) A metadata search apparatus comprising:

a hint information analysis unit for analyzing~~metadata optimization~~ hint information describing a type and contents of each descriptor contained in metadata;

a metadata analysis unit for analyzing the metadata describing contents and a structure of multimedia content containing at least one of moving pictures and audio based on the analyzed~~metadata optimization~~ hint information and a search condition; and

a search unit for searching content matching the search condition using a result of the analysis of the metadata.

8. (Currently Amended) A metadata re-generation condition setting apparatus comprising:

a hint information analysis unit for analyzing~~metadata optimization~~ hint information describing a type and contents of each descriptor contained in metadata; and

a metadata re-generation condition setting unit for setting a condition for re-generation of metadata describing contents and a structure of multimedia content containing at least one of moving pictures and audio based on the analyzed~~metadata optimization~~ hint information.

9. (Currently Amended) A content delivery apparatus comprising:

a hint information analysis unit for analyzing~~metadata optimization~~ hint information describing a type and contents of each descriptor contained in metadata;

a metadata analysis unit for extracting each description matching a condition for content restructuring from the metadata describing contents and a structure of multimedia content containing at least one of moving pictures and audio based on the analyzed~~metadata optimization~~ hint information and the condition for the content restructuring; and

a content restructuring/delivery unit for restructuring the content based on the extracted description and delivering the restructured content to a client terminal.

10. (Currently Amended) A metadata delivery method comprising the steps of:

analyzing~~metadata optimization~~ hint information describing a type of each descriptor contained in metadata;

re-generating second metadata by analyzing the metadata describing contents and a structure of multimedia content containing at least one of moving pictures and audio based on the analyzed~~metadata optimization~~ hint information and a condition for re-generation of the metadata; and

delivering the re-generated second metadata to a client terminal.

11. (Currently Amended) A metadata delivery method according to claim 10,

wherein the~~metadata optimization~~ hint information describes a location of a metadata file and an appearing element number showing a number of elements contained in the metadata ~~as metadata file information~~.

12. (Currently Amended) A metadata delivery method according to claim 10,

wherein the~~metadata optimization~~ hint information describes a size of a metadata file, a format of the metadata file, and syntax~~file information as metadata~~ file information.

13. (Currently Amended) A metadata delivery method according to claim 10,

wherein the~~metadata optimization~~ hint information describes a name of the descriptor contained in the metadata ~~as one piece of metadata construction element information~~.

14. (Currently Amended) A metadata delivery method according to claim 10,

wherein the~~metadata optimization~~ hint information describes a frequency, at which the descriptor contained in the metadata appears~~, as one piece of metadata construction element information~~.

15. (Currently Amended) A metadata delivery method according to claim 10,

wherein the~~metadata optimization~~ hint information describes a completeness of description of the descriptor contained in the metadata~~as one piece of metadata construction element information~~.

16. (Currently Amended) A metadata delivery method according to claim 10,

wherein the~~metadata optimization~~ hint information describes a temporal hierarchical property possessed by the descriptor contained in the metadata~~as one piece of metadata construction element information~~.

17. (Currently Amended) A metadata delivery method according to claim 10,

wherein the~~metadata optimization~~ hint information describes a spatial hierarchical property possessed by the descriptor contained in the metadata~~as one piece of metadata construction element information~~.

18. (Currently Amended) A metadata delivery method according to claim 10,

wherein the~~metadata optimization~~ hint information describes an appearing position at which the descriptor contained in the metadata appears~~, as one piece of metadata construction element information~~.

19. (Currently Amended) A metadata delivery method according to claim 10,

wherein the~~metadata optimization~~ hint information describes a type of the descriptor contained in the metadata~~ as one piece of metadata construction element information~~.

20. (Currently Amended) A metadata delivery method according to claim 10,

wherein the~~metadata optimization~~ hint information describes an assumable value range of the descriptor contained in the metadata.

21. (New) A hint information description method comprising:

describing, as hint information for manipulation of metadata composed of at least one descriptor describing semantic content, a structure, and characteristics of content, a name or an identifier of each descriptor contained in the metadata.

22. (New) A hint information description method comprising:

describing, as hint information for manipulation of metadata composed of at least one descriptor describing semantic content, a structure, and characteristics of content, an assumable value range of each descriptor contained in the metadata.

23. (New) A hint information description method comprising:

describing, as hint information for manipulation of metadata composed of at least one descriptor describing semantic content, a structure, and characteristics of content, an appearing number and an appearing position of each descriptor contained in the metadata.

24. (New) A hint information description method according to claim 23,

wherein the appearing position of each descriptor contained in the metadata is described using a maximum value of a depth in a hierarchical structure at which the descriptor or an identifier unique to the descriptor appears.

25. (New) A hint information description method comprising:

describing, as hint information for manipulation of metadata composed of at least one descriptor describing semantic content, a structure, and characteristics of content, when a descriptor contained in the metadata is hierarchically constructed, a maximum value of a depth of the descriptor in a hierarchical structure.

26. (New) A hint information description method comprising:

describing, as hint information for manipulation of metadata composed of at least one descriptor describing semantic content, a structure, and characteristics of content, a sum of an appearing number of each descriptor contained in the metadata.

27. (New) A hint information description method comprising:

describing, as hint information for manipulation of metadata composed of at least one descriptor describing semantic content, a structure, and characteristics of content, a location of a syntax file defining syntax of the metadata.

28. (New) A hint information description method comprising:

describing, as hint information for manipulation of metadata composed of at least one descriptor describing semantic content, a structure, and characteristics of content, information indicating whether each descriptor judged as possibly having child elements with reference to a syntax file defining syntax of the metadata actually contains every child element in the metadata.

29. (New) A metadata re-generation apparatus that performs restructuring by extracting only each description suited for any of a capability of a metadata receiving apparatus, communication environments of the metadata receiving apparatus, and a user request from metadata composed of at least one descriptor describing semantic content, a structure, and characteristics of content, comprising:

hint information analyzing means for analyzing hint information describing a name or an identifier of each descriptor contained in the metadata; and

metadata analyzing means for judging whether the metadata contains each description necessary for metadata after re-generation using the analyzed hint information.

30. (New) A metadata re-generation apparatus according to claim 29, further comprising:

means for analyzing the hint information describing an appearing position and an appearing frequency of each descriptor contained in the metadata; and

metadata analyzing means for judging whether every descriptor corresponding to the appearing position is analyzed or analysis by the appearing frequency is finished using the analyzed hint information.

31. (New) A metadata re-generation apparatus according to claim 29, further comprising:

means for, after the metadata is re-generated, re-generating hint information corresponding to the re-generated metadata.

32. (New) A metadata delivery apparatus that performs restructuring by extracting only each description suited for any of a capability of a metadata receiving apparatus, communication environments of the metadata receiving apparatus, and a user request from metadata composed of at least one descriptor describing semantic content, a structure, and characteristics of content, comprising:

hint information analyzing means for analyzing hint information describing a name or an identifier of each descriptor contained in the metadata; and

metadata analyzing means for judging whether the metadata contains each description necessary for metadata after re-generation using the analyzed hint information.

33. (New) A metadata delivery apparatus according to claim 32, further comprising:

means for analyzing the hint information describing an appearing position and an appearing frequency of each descriptor contained in the metadata; and

metadata analyzing means for judging whether every descriptor corresponding to the appearing position is analyzed or analysis by the appearing frequency is finished using the analyzed hint information.

34. (New) A content search apparatus that searches for content using metadata composed of at least one descriptor describing semantic content, a structure, and characteristics of the content, comprising:

hint information analyzing means for analyzing hint information describing a name or an identifier of each descriptor contained in the metadata; and

metadata analyzing means for judging whether each descriptor to be used for the searching is contained using the analyzed hint information.

35. (New) A metadata re-generation apparatus according to claim 34, further comprising:

means for analyzing the hint information describing an appearing position and an appearing frequency of each descriptor contained in the metadata; and

metadata analyzing means for judging whether every descriptor corresponding to the appearing position is analyzed or analysis by an appearing number is finished using the analyzed hint information.

36. (New) A metadata re-generation condition setting apparatus comprising:

means for obtaining the hint information generated with the hint information description method according to any one of claims 21 to 28 and an external condition for metadata re-generation, and analyzing the obtained hint information; and

means for setting a condition for the metadata re-generation using the analyzed hint information and the obtained external condition for the metadata re-generation.

37. (New) A content re-generation apparatus that re-generates at least one content to suite any of a capability of a content receiving apparatus, communication environments of the content receiving apparatus, and a user request, comprising:

hint information analyzing means for analyzing hint information describing a name or an identifier of each descriptor contained in metadata composed of at least one descriptor describing semantic content, a structure, and characteristics of content; and

metadata analyzing means for judging whether each description necessary for the content re-generation is contained using the analyzed hint information.

38. (New) A metadata re-generation method for performing restructuring by extracting only each description suited for any of a capability of a metadata receiving apparatus, communication environments of the metadata receiving apparatus, and a user request from metadata composed of at least one descriptor describing semantic content, a structure, and characteristics of content, comprising:

analyzing hint information describing a name or an identifier of each descriptor contained in the metadata; and

judging whether the metadata contains each description necessary for metadata after re-generation using the analyzed hint information.

39. (New) A content re-generation method for re-generating at least one content to suite any of a capability of a content receiving apparatus, communication environments of the content receiving apparatus, and a user request, comprising:

analyzing hint information describing a name or an identifier of each descriptor contained in metadata composed of at least one descriptor describing semantic content, a structure, and characteristics of content; and

judging whether each description necessary for the content re-generation is contained using the analyzed hint information.

40. (New) A metadata editing apparatus according to claim 2, further comprising:

a scene change detection unit for detecting each scene change point of the multimedia content based on an inter-frame difference,

wherein the scene division unit divides the multimedia content into the plurality of scenes based on the scene change point.

41. (New) A metadata re-generation apparatus according to claim 30, further comprising:

means for, after the metadata is re-generated, re-generating hint information corresponding to the re-generated metadata.